

**What is claimed is:**

**[Claim 1]** 1. An apparatus for evaluating a magnetic head, designed to determine as to whether the fixed layer of the magnetic head has undergone inversion of magnetization direction, said apparatus comprising:

a support unit that supports the magnetic head above a disk that is rotating and has bumps;

a DC-current supplying unit that supplies a DC current to a write coil of the magnetic head, thereby thermally deforming an element part of the magnetic head and making the element part to protrude and abut on the bumps, thus applying an impact to the disk; and

a magnetism-applying unit that applies a magnetic field to the top of a core slider of the magnetic head when the element part abuts on the bumps, said magnetic field extending in a direction opposite to the magnetization direction of the fixed layer.

**[Claim 2]** 2. The apparatus according to claim 1, wherein said disk is a laser-bump disk that has bumps formed on a surface by applying a laser beam to the surface.

**[Claim 3]** 3. The apparatus according to claim 1, further comprising a sense-current supplying unit that supplies a sense current to the magnetic head when the element part abuts on the bumps.

**[Claim 4]** 4. The apparatus according to claim 1, further comprising a voltage-monitoring unit that monitors a voltage at which a sense current is supplied.

**[Claim 5]** 5. The apparatus according to claim 1, further comprising a mechanism that moves the magnetic head in the disk

having bumps formed in a region extending in a radial direction and arranged at predetermined intervals in a circumferential direction, between a region of the disk, where the bumps are formed, and a region of the disk, where no bumps are formed.

**[Claim 6]** 6. A method of evaluating a magnetic head, designed to determine as to whether the fixed layer of the magnetic head has undergone inversion of magnetization direction,

wherein the magnetic head is supported above a disk that is rotating and has bumps; a DC current is supplied to a write coil of the magnetic head, thereby thermally deforming an element part of the magnetic head and making the element part to protrude and abut on the bumps, thus applying an impact to the disk; and a magnetic field is applied to the top of a core slider of the magnetic head when the element part abuts on the bumps, thereby to determine as to whether the fixed layer of the magnetic head has undergone inversion of magnetization direction, said magnetic field extending in a direction opposite to the magnetization direction of the fixed layer.

**[Claim 7]** 7. The method according to claim 6, wherein a sense current is supplied to the magnetic head when the element part abuts on the bumps.

**[Claim 8]** 8. A method of evaluating a magnetic head, designed to determine as to whether the fixed layer of the magnetic head has undergone inversion of magnetization direction, said method comprising:

a first Dibit waveform-acquiring step of acquiring a first Dibit waveform by monitoring a voltage at which a sense current is supplied, over a disk that is rotating and has no bumps;

an impact-applying step of applying an impact to the disk, first by supporting the magnetic head above a disk rotating and having bumps, and supplying a DC current to a write coil of the magnetic head, thereby thermally deforming an element part of the magnetic head and making the element part to protrude and abut on the bumps, then by applying a magnetic field to the top of a core slider of the magnetic head when the element part abuts on the bumps, said magnetic field extending in a direction opposite to the magnetization direction of the fixed layer;

a second Dabit waveform-acquiring step of acquiring a second Dabit waveform by monitoring a voltage at which a sense current is supplied, over the disk that is rotating and has no bumps; and

an inversion-detecting step of determining as to whether the fixed layer of the magnetic head has undergone inversion of magnetization direction, by comparing the first Dabit waveform with the second Dabit waveform.

**[Claim 9]** 9. The method according to claim 8, wherein the disk has bumps formed in a region extending in a radial direction and arranged at predetermined intervals in a circumferential direction; in the first and second Dabit waveform-acquiring steps, the magnetic head is supported above a region of the disk, where no bumps are formed; and in the impact-applying step, the magnetic head is supported above the region of the disk, where the bumps are formed.

**[Claim 10]** 10. The method according to claim 6, wherein the magnetic head is evaluated after the magnetic head has been equipped with a completed HGA (Head Gimbal Assembly).

**[Claim 11]** 11. A disk for use in a method of evaluating a magnetic head by applying an impact to the magnetic head under

specific condition and then determining as to whether the fixed layer of the magnetic head undergoes inversion of magnetization direction, said disk having bumps that apply the impact to the magnetic head while being rotated.

[Claim 12] 12. The disk according to claim 10, wherein the bumps have been formed by applying a laser beam to a disk-shaped medium.

[Claim 13] 13. The disk according to claim 10, which has a bump region in which bumps are formed, and a non-bump region in which no bumps are formed.